

REMARKS

Pursuant to 37 CFR 1.125, *Substitute Specification*, Applicants believe that the number and nature of amendment to the specification will render it difficult for the Examiner to consider this application, and for papers to be arranged for printing and copying. In accordance with the requirements of 37 CFR section 1.125, "Substitute Specification", and in accordance with customary practice, Applicants maintain that the Substitute Specification contains no new matter.

A "marked-up" copy of the original specification, is submitted herewith which shows the portions of the original specification which have been added and/or deleted. This marked-up copy was prepared using the "CompareRite - The Instant Redliner" program, and was supplemented with several pen and ink notations. The original specification was scanned into WordPerfect format in order to facilitate comparison with the substitute specification.

A petition for a one-month extension of time is enclosed in duplicate.

§103 REJECTIONS

Claims 1-6 and 10 stand rejected under 35 U.S.C. §103 as being unpatentable (1) over Applicants' alleged admission of prior art at the specification, page 11, line 12, and (2) over Underwood alone or Underwood in view of Smith. For the following reasons, Applicants assert that these rejections are improper,

and therefore urge the Examiner to reconsider and withdraw these rejections.

APPLICANTS' ALLEGED ADMISSION

The Office Action alleges that Applicants have admitted to "using the dies claimed for many years." This rejection is improper for two reasons. First, read in its proper context, there is absolutely no reason to believe that the dies being discussed are those dies which are mentioned in the process claims. Second, even if it is assumed for the sake of argument that prior art dies are used in conjunction with the present invention, that would bear little relevance to whether the claimed process of the present invention is patentable.

Returning to the issue of whether the dies discussed in the specification at page 11, line 12, are those dies mentioned in the claims, it can be seen that the portion of the specification immediately preceding page 11, line 12 is a discussion of prior art dies. Starting at page 10, line 33, aspects of several prior art dies are discussed, including degree of pressure and gap size. Applicants' comparison of these prior art dies to dies Applicants have used merely provides a point of reference for Applicants assertion that the prior art dies are of a robust design suitable for use with 21-28 g/m<sup>2</sup> papers. At most, Applicants are stating that through use of various dies in their own business they are familiar with prior dies and

understand these dies to have contain performance characteristics.

As to the issue of whether use of a particular die is relevant to the non-obviousness of a process which happens to use a die, the Examiner is reminded that the claims relate to a process for producing casings and the casings themselves, not a die. It is the non-obviousness of the process and the casings, not the non-obviousness of individual components used to practice the process and produce the casings, which is relevant.

Almost every invention combines "old" elements and uses "known" starting materials. An invention, however, must be considered as a whole and not as collection of steps or components. It has long been established that "virtually all inventions are necessarily combinations of old elements. The notion...that...claims can be declared invalid merely by finding similar elements in separate prior patent...cannot be the law under the statute, §103". Panduit Corp. v. Dennison Mfg. Co., 810 F.2d 1561, 1575 (CAFC, 1987).

The process of the present invention relates to a method for producing casings from paper previously believed to be of insufficient weight to produce structurally sound casing or to survive the manufacturing process. These casing are produced by a method in which the starting materials, and the process for combining starting materials, must meet various specifications. The fact that a particular component such as a die may or may not

be known in the art is simply not determinative of the obviousness of the process as a whole.

It is not understood why the Examiner states, in the same paragraph discussing Applicants' alleged admission of prior art discussed above that "[i]t has long been known to impregnate fibrous manilla hemp paper with a viscose solution and their to regenerate the viscose solution to produce cellulose found casing," since the Examiner explores this issue more fully in his discussion of Underwood. Applicants will therefore discuss this issue in the context of Underwood.

UNDERWOOD

The gist of the Examiner's rejection based on Underwood, or based on Underwood in view of Smith, is that the process of producing food casings by impregnating manilla hemp paper with viscose, and then regenerating the viscose to cellulose, has long been known in the art, and that simply using a different type of paper as a starting material is an obvious variation of this known process. This line of reasoning is improper for a number of reasons.

It is admitted by the Examiner that Underwood does not disclose a process for making casings from paper weighing  $15\text{g}/\text{m}^2$  or less, and Applicants submit that Smith likewise does not teach such a process. However, the Office Action argues that since there was an economic incentive to reduce the (paper) basis weight of casing, it would have been obvious to simply use light-

weight ( $15\text{g/m}^2$  or less) paper with a prior art process. However, economic incentive in the context of this invention actually weighs against obviousness.

The reference teachings suggest, at most, that one skilled in the art might find it obvious to try the claimed invention. But whether a particular combination might be "obvious to try" is not a legitimate test of patentability. In re Fine, 5 U.S.P.Q. 2d 1596, 1599 (C.A.F.C. 1988); Ex parte Old 229 U.S.P.Q. 196, 200 (Bd. Pat. App. Inter. 1985).

Although economic incentive may in certain situations provide the skilled artisan with a basis for attempting "obvious" modification of a known process, the fact that these exists an economic incentive to achieve a goal, combined with a long-standing inability of those skilled in the art to achieve that goal, highlights the nonobviousness of the invention that finally does achieve that goal.

It is also noted, that Smith's patent issued on January 11, 1938 (filed in 1935) and Underwood's on March 18, 1969 (filed in 1964). The appellants' patent application was filed over 20 years later than Underwood and over 50 years later than Smith. If the appellants' teachings were obvious from these patents, it is submitted that the inventive process and casings would have been invented long ago. Instead, the invention has enjoyed a remarkable commercial success since its relatively recent invention, with strong continued growth foreseeable.

Applicants agree that there has long been, and still is, an economic incentive to make food casings from the most light-weight of papers. However, prior art light-weight papers all lacked the requisite stretch and strength properties necessary to make food casing: i.e., the paper was generally not strong enough to survive modern high-speed casing-manufacturing processes intact (specification, page 7, lines 3-7), and if casing-manufacturing process was slowed-down to preserve the integrity of the weaker, lighter paper, the process became economically disadvantageous (Specification, page 9, lines 8-13). It was also economically disadvantageous to design new dies specifically designed for light-weight papers (specification, page 8, line 35). The desirability of using light weight papers therefore represented a goal unobtainable with prior art processes.

The present invention has succeeded in overcoming the problems associated with using light-weight paper in prior art high speed casing manufacture process without the need to redesign the die or to slow down the manufacturing process to reduce stress on the paper. This is done in two ways: First, a method has been disclosed which employs a modified manufacturing apparatus to reduce paper to metal contact in such a way that paper stress is reduced. This method is fully described at page 13 et seq. of the substitute specification. Second, this invention also claims a method for manufacturing casings which

include the use of paper wet strengthened with resins. These papers exhibit superior stretch and strength properties (see Tables 1-3A) which represents a further improvement over prior art processes.

From the above discussion it can be seen that economic incentive to achieve a goal and successfully achieving that goal are two distinct concepts. Wishful thinking on the part of those skilled in die that it would be advantages to manufacture casing with 15 g/m<sup>2</sup> or less weight paper is a far cry from actually inventing a process which accomplishes this end.

Moreover, assuming arguendo that a prima facie case of obviousness has been established, the data of record provides more than sufficient evidence for rebutting any such prima facie case of obviousness.

Casing smoothness summary results are reported in specification of application Serial No. 07/730,972, incorporated into this application by reference. Reference to the data at Table 1 of that specification demonstrates that the subject casings are surprisingly and unpredictably smoother both on their inside and outside surfaces than conventional reinforced casings. This is due to the deposition of the viscose (and therefore of the regenerated cellulose) which, together with the fibrous support, comprises the mass of the fibrous casing.

It is also clear that for purposes of reinforcement, the paper substrate, to be effective, should be displaced as far

as possible towards the center or middle of the composite material, i.e. the finished casings. Meeting this requirement also produces a stronger casing than would otherwise be obtained. A review of the casing burst strength in the Table in 07/730,972 shows that casing strength increases for a particular size of fibrous casing, as a function of increasing paper substrate weight, 13 to 17 g/m<sup>2</sup>, 13 to 19 g/m<sup>2</sup>, and so on. However, despite the lighter weight of the inventive casings, of around 10%, in addition to incorporating lighter substrate paper weights, the inventive casings comprise less regenerated cellulose from viscose. However, casing strengths are seen to decrease by between only 10.2 and 26.6%, for paper basis weight decreases of between 23.5 and 43.5%, which may be attributed to the superior construction of the subject casings.

The economic significance of this latter point is apparent. Indeed, in terms of commercial success of casings which are the subject of this invention, sales volumes have increased by 10% in fiscal 1992, 17% in fiscal 1993, and in terms of casings sold, is running in 10's of million meters.

Moreover, the sum effect of the smoothness tests is not as expected from the prior art.

The reason for the unexpectedly superior smoothness properties associated with the appellants' invention is most likely based on the viscose more thoroughly penetrating the 13 g/m<sup>2</sup> paper substrate than the heavier weight paper substrates of

the prior art. Given that the viscose is applied to the paper from the outside surface inwards, it is also significant that improvements in smoothness are obtained for both inner and outer surfaces, further attesting to the superiority of the subject casings than those of the prior art.

The greater significance of the smoothness values is twofold. On one hand it points to the fibrous support of the subject tubing, based on 13 g/m<sup>2</sup> paper, being more fully embedded in the regenerated cellulose from the secondary viscosing stage of the tubing manufacture than any of the conventional examples, (based on heavier weight substrates), which in turn would be expected to give rise to stronger tubing than would have been predicted (which is shown in the data). On the other hand, a casing possessing smoother surface properties, particularly with respect to the inner surfaces, would be expected also to possess enhanced processing characteristics in terms of not becoming enmeshed with the meat of the sausage during ripening stages (for dry sausage manufacture such as salami) when the casing shrinks with the product as it dries. This avoids any uneven drying at the surface of the sausage which then retards the speed of drying of the sausage's interior and therefore of the whole product. Of course, the greater elasticity and lighter weight of subject tubing also provides a positive contribution to processing. Enhancement, which overall, results in a significant 25% saving

of drying time was observed for the inventive tubing, as set forth in the specification as filed.

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In view of the foregoing amendments and remarks, it is urged that the present application is in condition for allowance.

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Favorable reconsideration of the application and prompt issuance  
of a Notice of Allowance are earnestly solicited.

Respectfully submitted,

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